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Rochester Institute of Technology

College of Graphic Arts & Photography
School of Photographic Arts & Sciences

One Lomb Memorial Drive
P.O. Box 9887
Rochester, New York 14623-0887

LANDSAT 4 BAND 6 DATA EVALUATION

Contract #NAS5-27323

Sixth Quarterly Report

March 15, 1984

Prepared for:

NASA/Goddard Space Flight Center
Greenbelt, Maryland 20771

Objectives:

The objectives of this investigation are to evaluate and monitor the radiometric integrity of the Landsat-D Thematic Mapper (TM) thermal infrared channel (band 6) data to develop improved radiometric preprocessing calibration techniques for removal of atmospheric effects.

Problems:

Continued lack of simultaneous TM and underflight data is delaying much of the major thrust of the effort. At present we are anticipating that time extensions will be required to complete the program. Until scheduled TM data collection resumes, it is difficult to estimate completion schedules or any costs that might be associated with a time extension.

Accomplishments:

The aircraft underflight system was flown on a related effort which demonstrated that data collection problems previously experienced had been successfully repaired. A motor in the in-flight film advance system failed on this flight and is being repaired. The FM tape back-up worked fine so that no data was lost. We expect to use this same system with back-up to underfly the TM during the next reporting period.

Efforts this period have been reduced in anticipation of high levels of effort when the TM becomes fully functional. A limited effort has been directed at improved methods of display of TM Band 6 data. This has concentrated on implementation of intensity hue and saturation displays using the Band 6 data to control hue. These displays tend to give the appearance of high resolution thermal data. They also make whole scene thermal interpretation easier by color coding thermal data in a manner that aids visual interpretation. More quantitative efforts have been directed at utilizing the reflected bands to define land cover classes and then

modifying the thermal displays using long wave optical properties associated with cover type. We anticipate reporting on these results more fully in future quarterly reports.

Significant Results:

None this reporting period.

Publications:

None this reporting period.

Recommendations:

None this reporting period.

Funds Expended:

$53,316 representing 44% of the total program effort.

Data Utility:

N/A

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